Volume 8 Number 1 January 1992

Original Articles

1 **CAN A CLINICIAN PREDICT THE TECHNICAL EQUIPMENT A PATIENT WILL NEED DURING INTENSIVE CARE UNIT TREATMENT? AN APPROACH TO STANDARDIZE AND REDESIGN THE INTENSIVE CARE UNIT WORKSTATION**
Jonas Hähnel, MD, Wolfgang Friesdorf, MD, Bernhard Schwilk, MD, Thomas Marx, MD, and Silvia Blessing

7 **OXYGEN CONSUMPTION AND MIXED VENOUS OXYGEN SATURATION MONITORING DURING ORTHOTOPIC LIVER TRANSPLANTATION**
Bruce D. Speiss, MD, Kenneth J. Tuman, MD, Robert J. McCarthy, PharmD, William G. Logas, DO, Timothy R. Lubenow, MD, James Williams, MD, Howard Sankray, MD, and Preston Foster, MD

12 **REFLECTION AND TRANSMISSION PULSE OXIMETRY DURING COMPROMISED PERIPHERAL PERFUSION**
Heikki Pälve, MD

16 **LASER DOPPLER MEASUREMENTS OF SKIN BLOOD FLOW BEFORE, DURING, AND AFTER LUMBAR SYMPATHETIC BLOCKADE IN CHILDREN AND YOUNG ADULTS WITH REFLEX SYMPATHETIC DYSTROPHY SYNDROME**
Jose E. Irazuzta, MD, Charles B. Berde, MD, PhD, and Navil F. Sethna, MB, ChB

20 **CONTINUOUS NONINVASIVE CARDIAC OUTPUT AS ESTIMATED FROM THE PULSE CONTOUR CURVE**
Irwin Gratz, DO, Jonathan Kraidin, MD, Athole G. Jacobi, MD, Nieves G. deCastro, MD, Pascal Spagna, MD, and Ghassem E. Larijani, PharmD

28 **EVALUATION OF COLLATERAL CIRCULATION OF THE HAND**
Thomas M. Fuhrman, MD, William D. Pippin, MD, Lance A. Talmage, BA, and Thomas E. Reilley, DO

33 **AN EVALUATION OF TWO ACTIVATED CLOTTING TIME MONITORS DURING CARDIAC SURGERY**
David L. Reich, MD, Kenneth Zahl, MD, M. Herma Perucho, RN, and Daniel M. Thys, MD

37 **REMOTE AUSCULTATORY PATIENT MONITORING DURING MAGNETIC RESONANCE IMAGING**
S. Henneberg, MD, B. Hök, L. Wiklund, MD, and G. Sjödin

44 **SUPERIOR VENA CAVAL AND MIXED VENOUS OXYHEMOGLOBIN SATURATIONS IN CHILDREN RECOVERING FROM OPEN HEART SURGERY**
Jukka Räsänen, MD, Kaija Peltola, MD, and Mauri Leijala, MD

50 **CARDIOVASCULAR SIMULATION USING A MULTIPLE MODELING METHOD ON A DIGITAL COMPUTER—SIMULATION OF INTERACTION BETWEEN THE CARDIOVASCULAR SYSTEM AND ANGIOTENSIN II**
Toru Masuzawa, PhD, Yasuhiro Fukui, PhD, and N. Ty Smith, MD

Case Reports

59 **AUTOMATED ANESTHESIA RECORDS AND ANESTHETIC INCIDENTS**
David N. Thrush, MD

62 **SIGNIFICANCE OF DIASTOLIC PULMONARY ARTERY PRESSURE PEAKS**
Gary Michael Dobson, MD, CM, FRCP(C), Brian F. Horan, MB, BS, FC Anaesth, FFARACS, and Neil Thomas Bradburn, MB, BS, FFARACS

Monitoring Dilemma

66 **AUTOMATED ST-SEGMENT TRENDING: WHAT DOES IT MEAN?**
Brian L. Partridge, MD, DPhil, Paul G. Barash, MD, Martin J. London, MD, and Hugh A. McCann, MD

Technical Notes

74 **IN VITRO VALIDATION OF A THERMODILUTION RIGHT VENTRICULAR EJECTION FRACTION METHOD**
Stephanie Eaton Ferris, BS, MS, and Mark Konno, BS

81 **ANALYSIS OF INTRACRANIAL PRESSURE**
D. John Doyle, MD, PhD, FRCPC, and Patrick W. S. Mark, MD

Correspondence

91 **CONTINUOUS MIXED VENOUS OXYGEN SATURATION DURING RECURRENT NODAL RHYTHM: AN UNUSUAL WAVEFORM TREND**
Eran Segal, MD, Kenneth R. Courington, MD, Rama M. Joshi, MD, and T. James Gallagher, MD, FACCP

92 **ELECTROCARDIOGRAPHIC CHANGES ASSOCIATED WITH THE PRONE POSITION**
Devanand Mangar, MD, George W. Lightly, Jr, MD, and Enrico M. Camporesi, MD

93 **CLOSED-CIRCUIT PROGRAMMING FOR CODE FOR CALCULATOR**
Joel B. Gunter, MD

95 **BLOOD PRESSURE MONITORING**
Richard I. Cook, MD, and David D. Woods, PhD

95 **REPLY**
Ronald A. Kross, MD, Nitin Shah, MD, and Robert F. Bedford, MD

95 **FINAPRES AND DINAMAP FOR INTRAARTERIAL MONITORING**
David G. Silverman, MD, and Jonathan Halevy, MD

97 **REPLY**
Michael S. Gorback, MD, and Timothy J. Quill, MD

Books

98 **BOOKS RECEIVED**

Volume 8 Number 2 April 1992

Original Articles

101 **CAPNOGRAPHIC TREND CURVE MONITORING CAN DETECT 1-ML PULMONARY EMBOLI IN HUMANS**
Gilbert C. Carroll, MD, FACP, FCCP, FCCM

107 **THE SUSCEPTIBILITY OF THERMISTOR-BASED ESOPHAGEAL TEMPERATURE PROBES TO ERRORS CAUSED BY ELECTRICALLY CONDUCTIVE FLUIDS ("ARTIFICIAL SALIVA")**
Mitchell F. Berman, MD

111 **VARIABILITY OF BLOOD GASES, PULSE OXIMETER SATURATION, AND END-TIDAL CARBON DIOXIDE PRESSURE IN STABLE, MECHANICALLY VENTILATED TRAUMA PATIENTS**
Dean Hess, MEd, RRT, and Nikhileshwer N. Agarwal, MD, FACS

116 **COMPARATIVE ANALYSIS BETWEEN EPIDURAL (GAELTEC) AND SUBDURAL (CAMINO) INTRACRANIAL PRESSURE PROBES**
Christian Weinstabl, MD, Bernd Richling, MD, Burghard Plainer, MD, Thomas Czech, MD, and Christian K. Spiss, MD

121 **PRESSURE MONITORING CAN ACCURATELY POSITION CATHETERS FOR AIR EMBOLISM ASPIRATION**
Paul Mongan, MD, Richard E. Peterson, MD, and Robert D. Culling, DO

126 **EFFECTS OF HYPOCAPNIA ON CANINE SPINAL, SUBCORTICAL, AND CORTICAL SOMATOSENSORY-EVOKED POTENTIALS DURING ISOFLURANE ANESTHESIA**
Mary Ann Gravenstein, MD, Frank Sasse, MD, and Kirk Hogan, MD

131 **ELECTROMYOGRAPHIC MONITORING OF PROFOUND SURGICAL MUSCLE RELAXATION DURING CARDIAC ANESTHESIA**
Laszlo Gyermek, MD, and Gloria Henderson, CRNA

Technical Note

136 **THE "TORRSTICK": A RULER CALIBRATED IN MILLIMETERS OF MERCURY FOR MEASUREMENT OF HYDROSTATIC PRESSURE**
Frank E. Block, Jr, MD, G. Todd Schulte, MD, Timothy Morris, BSEE, and Maynard Ramsey III, MD, PhD

Clinical Controversy

139 **SIDESTREAM VERSUS MAINSTREAM CARBON DIOXIDE ANALYZERS**
Frank E. Block, Jr, MD, and John S. McDonald, MD

Opinion

142 **TECHNOLOGY ASSESSMENT OF ANESTHESIA MONITORS**
Nathan L. Pace, MD

Correspondence

147 **MEASUREMENT OF SYSTOLIC BLOOD PRESSURE WITH A PULSE OXIMETER**
Rajiv Chawla, MD, A. Indrayan, PhD, and A. Bhattacharya, MD

147 **REPLY**
Pekka O. Talke, MD, Ray J. Nichols, Jr, MD, and Daniel L. Traber, PhD

147 **THERMAL SAFETY OF A FILAMENTED PULMONARY ARTERY CATHETER**
Mark Yelderman, MD, Michael D. Quinn, PhD, and Russell C. McKown, PhD

150 **ABSTRACTS OF SCIENTIFIC PAPERS FROM THE SECOND ANNUAL MEETING OF THE SOCIETY FOR TECHNOLOGY IN ANESTHESIA**

Volume 8 Number 3 July 1992

Editorial

191 **ON THE SHOULDERS OF PROGRESS**
J. S. Gravenstein, MD

Original Articles

193 **RADIAL ARTERY CANNULATION: A COMPARISON OF 15.2- AND 4.45-CM CATHETERS**
Mark R. Dahl, MD, William L. Smead, MD, and Thomas D. McSweeney, BS

198 **CAN PEOPLE HEAR THE PITCH CHANGE ON A VARIABLE-PITCH PULSE OXIMETER?**
G. Todd Schulte, MD, and Frank E. Block, Jr, MD

201 **EDUCATIONAL COMPUTER SIMULATION OF MALIGNANT HYPERTHERMIA**
Howard A. Schwid, MD, and Daniel O'Donnell, PhD

209 **PULMONARY ARTERY CATHETER MONITORING DURING SINGLE-LUNG VENTILATION IN DOGS**
Charles Boucek, MD, FACP, Miroslav Klain, MD, Nancy Obuchowski, MS, and Renee Molner, BS

216 **CORRELATED, SIMULTANEOUS, MULTIPLE-WAVELENGTH OPTICAL MONITORING IN VIVO OF LOCALIZED CEREBROCORTICAL NADH AND BRAIN MICROVESSEL HEMOGLOBIN OXYGEN SATURATION**
I. J. Rampil, MSEE, MD, L. Litt, PhD, MD, and A. Mayevsky, PhD

226 **USE OF END-TIDAL P_{CO_2} AND TRANSCUTANEOUS P_{CO_2} AS NONINVASIVE MEASUREMENT OF ARTERIAL P_{CO_2} IN EXTUBATED PATIENTS RECOVERING FROM GENERAL ANESTHESIA**
B. P. Kavanagh, MB, BSc, MRCPI, A. N. Sandler, MB, MSc, FRCPC, K. E. Turner, MD, FRCPC, V. Wick, BScN, and S. Lawson, RN

Case Reports

231 **INCONSISTENCIES IN THE CORRELATION BETWEEN LOSS OF BRAIN STEM AUDITORY-EVOKED RESPONSE WAVES AND POSTOPERATIVE DEAFNESS**
William D. Mustain, PhD, Ossama Al-Mefty, MD, and Vinod K. Anand, MD

236 **CAPNOGRAPHY DOES NOT RELIABLY DETECT DOUBLE-LUMEN ENDOTRACHEAL TUBE MALPLACEMENT**
J. W. de Vries, MD, and M. C. Haanschoten, MD

Algorithm

238 **A NEUROMUSCULAR MONITORING SYSTEM BASED ON A PERSONAL COMPUTER**
David A. White, MD, and Milt Hull

STA Distinguished Lecture

243 **CAN TECHNOLOGY EDUCATION DURING MEDICAL SCHOOL MAKE BETTER DOCTORS?**
Richard J. Kitz, MS, MD

Correspondence

250 **IS PORTABLE CAPNOMETRY USEFUL DURING TRANSPORT OF THE CRITICALLY ILL?**
Colin J. Runcie, MB, MRCP, FFARCS, and William Reeve, MB, DRCOG, FFARCS

250 **A NEW SOLUTION TO THE PROBLEM OF MAINTAINING THE PROPER AIR-FLUID LEVEL IN FLUID-WARMER BUBBLE TRAPS**
Frank E. Block, Jr, MD

251 **CONTINUOUS MONITORING OF THE FLOW-VOLUME LOOPS AND COMPLIANCE DURING ANESTHESIA**
Gizella I. Bardoczky, MD, and Alain d'Hollander, MD

252 **EDITOR'S NOTE**
J. S. Gravenstein, MD

252 **CLOSED-LOOP CONTROL OF ARTERIAL PRESSURE DURING CARDIAC SURGERY**
James F. Martin, PhD

253 **REPLY**
A. V. Sebald

Editorial

255 **THE ROLE OF SIMULATION IN THE DESIGN OF CONTROL SYSTEMS**
Jan E. W. Beneken, PhD

256

Volume 8 Number 4 October 1992

Original Articles

257 **EXPERIMENTAL AND CLINICAL EVALUATION OF A NONINVASIVE REFLECTANCE PULSE OXIMETER SENSOR**
Setsuo Takatani, PhD, Charles Davies, MS, Naoki Sakakibara, MD, PhD, Andrew Zurick, MD, Erik Kraenzler, MD, Leonard R. Golding, MD, George P. Noon, MD, Yukihiko Nose, MD, PhD, and Michael E. DeBakey, MD

267 **NONINVASIVE CARDIAC OUTPUT DETERMINED WITH A NEW METHOD BASED ON GAS EXCHANGE MEASUREMENTS AND CARBON DIOXIDE REBREATHING: A STUDY IN ANIMALS/PIGS**
Andras Gedeon, DSc, Paul Krill, PhD, Jens Kristensen, MD, and Ingeborg Gottlieb, BSc

279 **METHODS TO PRODUCE CALIBRATION MIXTURES FOR ANESTHETIC GAS MONITORS AND HOW TO PERFORM VOLUMETRIC CALCULATIONS ON ANESTHETIC GASES**
Peter L. Christensen, PhD, Jacob Nielsen, MD, and Torben Kann, MScEE

285 **EVALUATION OF USERS' ABILITIES TO RECOGNIZE MUSICAL ALARM TONES**
Frank E. Block, Jr, MD

Case Report

291 **A WIDELY UNAPPRECIATED CAUSE OF FAILURE OF AN AUTOMATIC NONINVASIVE BLOOD PRESSURE MONITOR**
Matthew B. Weinger, MD, Thomas S. Scanlon, MD, and Larry Miller, MD

Knowing Your Monitoring Equipment

295 **ANESTHESIA SYSTEMS. PART I: OPERATING PRINCIPLES OF FUNDAMENTAL COMPONENTS**
James H. Cicman, BHS, RRT, Maria I. Jacoby, BS, RRT, Vinson F. Skibo, AS, CBET, and James M. Yoder, BA

Special Communications

308 **PATIENT-RELATED DATA MANAGEMENT**
W. Friesdorf, MD, and B. Schwilk, MD

315 **HOW CAN A STANDARD SOFTWARE PACKAGE FOR DATA MANAGEMENT IN ANESTHESIA BE ACHIEVED?**
Alex M. Zbinden, Jens Christensen, and Mario Kuster

Correspondence

319 **COMPUTERIZATION OF ANESTHESIA INFORMATION MANAGEMENT: YET ANOTHER APPLICATION**
Jeffrey M. Feldman, MD

319 **SPARE MASS SPECTROMETER VS LINKING SYSTEMS IN THE EVENT OF A SINGLE SYSTEM FAILURE**
A. William Paulsen, MMSc (Anes), PhD, CCE

320 **REPLY**
Richard A. Steinbrook, MD, Wallace R. Elliott, MS, CCE, Donald B. Goldman, BS, CBET, and James H. Philip, MD

320 **LETTER TO THE EDITOR**
Clifford M. Gevirtz, MD, MPH, Ralph A. Milliken, MD, MBA, and Paul L. Goldiner, MD, DDS

Book Review

321 ***MATHEMATICAL AND COMPUTER MODELING OF PHYSIOLOGICAL SYSTEMS*, BY VINCENT C. RIDEOUT**
Jan E. W. Beneken, PhD

Indexes to Volume 8

322 **AUTHOR INDEX**

324 **SUBJECT INDEX**